DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION

A00003SE Revision 12 (November 23 2004) LANCAIR LC40-550FG, LC42-550FG UC41-550FG Original Issue Date: August 3, 1997

TYPE CERTIFICATE DATA SHEET A00003SE

This data sheet, which is part of Type Certificate No. A00003SE, prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations.

Type Certificate Holder: The Lancair Company

22550 Nelson Road Bend, Oregon 97701

I - Model LC40-550FG (Utility Category), Approved September 18, 1998

Engine: Teledyne Continental Model IO-550-N, Engine Type Certificate E3SO.

Fuel: 100 (green) or 100LL (blue) grade aviation fuel.

Engine Limits: Maximum takeoff power and maximum continuous power = 310 horsepower at 2700 rpm.

See Engine Type Certificate Data Sheet E3SO for additional limitations.

Propeller: Hartzell Model PHC-J3YF-1RF/F7691D-1, Propeller Type Certificate P36EA

Hartzell Spinner Assembly, Part No. C-6446

Propeller Limits: Minimum diameter = 76 inches

Maximum diameter = 77 inches Low Pitch = $14.1^{\circ} \pm 0.5^{\circ}$ High Pitch = $34.7^{\circ} \pm 1.0^{\circ}$

Pitch limits measured at 30 inches radial distance.

Do not exceed 20 inches manifold pressure with propeller RPM below 2200. See Propeller Type Certificate Data Sheet P36EA for additional limits.

Airspeed Limits: V_o (3400 lbs) 149 KCAS (148 KIAS)

 $\begin{array}{lll} V_{\scriptscriptstyle D} \ (2500 \ lbs) & 128 \ KCAS \ (127 \ KIAS) \\ V_{\scriptscriptstyle FE} \ (Fully \ Extended) & 120 \ KCAS \ (119 \ KIAS) \\ V_{\scriptscriptstyle FE} \ (Intermediate \ Setting) & 130 \ KCAS \ (129 \ KIAS) \\ V_{\scriptscriptstyle NO} & 180 \ KCAS \ (178 \ KIAS) \\ V_{\scriptscriptstyle NE} & 235 \ KCAS \ (232 \ KIAS) \end{array}$

Note: V_{NO} and V_{NE} decrease by 5 KIAS for each 1000 feet above 12,000 feet (pressure altitude).

C.G. Range: Straight line variation between points.

Aft Limits 110 inches aft of datum from 2500 lbs to 3400 lbs.

Forward Limits 103 inches aft of datum from 2240 lbs to 2500 lbs then to 107

inches aft of datum at 3400 lbs.

Maximum zero fuel weight 103 inches aft of datum at 2725 lbs to 110 inches at 3228 lbs.

Minimum flying weight 103 inches aft of datum at 2240 lbs to 110 inches at 2500 lbs.

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Datum: The forward edge of the wing saddle is located 97.05 inches aft of the reference datum. Refer to

the latest revision of "Airplane Maintenance Manual," Document No. RA050000, for detailed

instructions.

Leveling Means: Plumb target and plumb line hanger are located in the rear seat area.

Weight limits: Maximum ramp and takeoff = 3400 lbs.

Maximum landing weight = 3230 lbs. Maximum empty weight = 2580 lbs.

Maximum zero fuel weight = 2725 lbs at 103 inches varying linearly to 3228 lbs at 110 inches. Minimum flying weight = 2240 lbs at 103 inches varying linearly to 2500 lbs at 110 inches.

Minimum Crew: 1 Pilot.

No. of Seats: 4 seats total: 2 located at 110 inches aft of datum.

2 located at 141.4 inches aft of datum.

Maximum Baggage: 20 pounds allowed on the hat shelf.

120 pounds total.

Fuel Capacity: 106 gallons total; 98 gallons useable.

(Two 53 gallon tanks in wings at 118.0 inches aft of datum).

Oil Type and Capacity: 8 qts drainable. See Engine Type Certificate Data Sheet E3SO.

Maximum Operating

Altitude: 14,000 feet without FAA approved oxygen system installed.

18,000 feet with FAA approved oxygen system installed.

Control Surface

Movements: Wing flaps: Cruise $0^{\circ} \pm 1^{\circ}$ Take off $12^{\circ} \pm 1^{\circ}$ Landing $40^{\circ} \pm 1^{\circ}$

 Ailerons:
 Up $22^{\circ} \pm 1^{\circ}$ Down $18^{\circ} \pm 1^{\circ}$

 Aileron Trim Tab:
 Up $22.4^{\circ} \pm 1^{\circ}$ Down $19.6^{\circ} \pm 1^{\circ}$

 Aileron Servo Tab:
 Up $20^{\circ} \pm 1^{\circ}$ Down $12^{\circ} \pm 1^{\circ}$

 Elevator:
 Up $13^{\circ} + 0^{\circ} - 0.5^{\circ}$ Down $12^{\circ} \pm 1^{\circ}$

 Elevator trim tab:
 Up $21^{\circ} \pm 1^{\circ}$ Down $30^{\circ} \pm 1^{\circ}$

Rudder: Right $17^{\circ} \pm 1^{\circ}$ Left $17^{\circ} \pm 1^{\circ}$ Left, rudder limiter $11.5^{\circ} \pm 0.5^{\circ}$

Additional Limitations: Airframe life limit: 12,000 flight hours (see NOTE 5).

Kinds of operations: Day and Night,

Visual Flight Rules (VFR) and Instrument Flight Rules (IFR).

Required Maintenance: The airplane must be maintained in accordance with the instructions for continued airworthiness

contained in the latest FAA approved revision to Chapter 4 of "Airplane Maintenance Manual,"

Document No. RA050000.

Required Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see

Certification Basis) must be installed in the aircraft for airworthiness certification.

In addition to the above required equipment, the following equipment is also required:

The latest FAA Approved/Accepted Revision of "Pilots Operating Handbook and FAA Approved

Flight Manual," Document No. RA050001.

The required equipment for various types of operations is specified in Appendix A to Section 6 of

the latest FAA Approved Revision of Document No. RA050001.

Design Data: The airplane shall be manufactured in accordance with the latest FAA approved revision of

"Master Drawing List", Document No. RA011002, or other FAA approved data.

Serial Numbers Eligible: 40004 and on

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Certification Basis: Part 23 of the Federal Aviation Regulations (FAR) effective February 1, 1965, as amended by 23-1

through 23-46. FAR 36 as amended on the date of certification. Application for type certificate,

dated June 14, 1995.

Equivalent Level of

Safety (ELOS) Findings: Stall and spin requirements of FAR's 23.201, 23.203, and 23.221 in accordance with

ELOS No. ACE-98-1 as detailed in the FAA memo dated September 3, 1998

(FAA memo reference no. 98-190S-581) and ELOS No. ACE-98-2 as detailed in the FAA memo

dated October 7, 1998 (FAA memo reference no. 98-190S-608).

Emergency exit requirements of FAR 23.807 in accordance with ELOS No. ACE-99-02 as detailed

in FAA memo dated February 2, 1999 (FAA memo reference no. 99-190S-64).

Production Basis: Production Certificate No. 719NM, dated April 9, 2004.

NOTE 1: A current weight and balance report with a list of equipment included in the certificated empty weight

must be provided for each aircraft at the time of original airworthiness certification.

NOTE 2: The placards specified in the latest FAA approved revision of "Pilots Operating Handbook and FAA"

Approved Flight Manual," Document No. RA050001, must be displayed.

NOTE 3: Major structural repairs must be accomplished at FAA certified repair stations rated for composite aircraft

structure work, in accordance with FAA approved Lancair repair methods or other methods approved

by the FAA.

NOTE 4: Exterior colors are limited to those specified in the latest FAA approved revision to Chapter 4 of

"Airplane Maintenance Manual," Document No. RA050000.

NOTE 5: The airframe life limit may be extended beyond 12,000 flight hours when a non-destructive inspection

process specifically approved by the FAA for this purpose is used.

II - Model LC42-550FG (Utility Category), Approved March 30, 2003

Engine: Teledyne Continental Model IO-550-N, Engine Type Certificate E3SO.

Fuel: 100 (green) or 100LL (blue) grade aviation fuel.

Engine Limits: Maximum takeoff power and maximum continuous power = 310 horsepower at 2700 rpm.

See Engine Type Certificate Data Sheet E3SO for additional limitations.

Propeller: Hartzell Model PHC-J3YF-1RF/F7691D-1, Propeller Type Certificate P36EA

Hartzell Spinner Assembly, Part No. C-6446

Propeller Limits: Minimum diameter = 76 inches

Maximum diameter = 77 inches Low Pitch = $14.1^{\circ} \pm 0.5^{\circ}$ High Pitch = $34.7^{\circ} \pm 1.0^{\circ}$

Pitch limits measured at 30 inches radial distance.

Do not exceed 20 inches manifold pressure with propeller RPM below 2200. See Propeller Type Certificate Data Sheet P36EA for additional limits.

Airspeed Limits: V_o (3400 lbs) 149 KCAS (148 KIAS)

 $\begin{array}{lll} V_{\scriptscriptstyle O} \, (2500 \, \text{lbs}) & 128 \, \text{KCAS} \, (127 \, \text{KIAS}) \\ V_{\scriptscriptstyle FE} \, (\text{Fully Extended}) & 120 \, \text{KCAS} \, (119 \, \text{KIAS}) \\ V_{\scriptscriptstyle FE} \, (\text{Intermediate Setting}) & 130 \, \text{KCAS} \, (129 \, \text{KIAS}) \\ V_{\scriptscriptstyle NO} & 180 \, \text{KCAS} \, (178 \, \text{KIAS}) \\ V_{\scriptscriptstyle NE} & 235 \, \text{KCAS} \, (232 \, \text{KIAS}) \end{array}$

Note: V_{NO} and V_{NE} decrease by 5 KIAS for each 1000 feet above 12,000 feet (pressure altitude).

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C.G. Range: Straight line variation between points.

Aft Limits 110 inches aft of datum from 2500 lbs to 3400 lbs.

Forward Limits 103 inches aft of datum from 2240 lbs to 2500 lbs then to 107

inches aft of datum at 3400 lbs.

Maximum zero fuel weight 103 inches aft of datum at 2725 lbs to 110 inches at 3228 lbs.

Minimum flying weight 103 inches aft of datum at 2240 lbs to 110 inches at 2500 lbs.

Datum: The forward edge of the wing saddle is located 97.05 inches aft of the reference datum. Refer to

the latest revision of "Airplane Maintenance Manual," Document No. RB050002, for detailed

instructions.

Leveling Means: Plumb target and plumb line hanger are located in the rear seat area.

Weight limits: Maximum ramp and takeoff = 3400 lbs.

Maximum landing weight = 3230 lbs. Maximum empty weight = 2580 lbs.

Maximum zero fuel weight = 2725 lbs at 103 inches varying linearly to 3228 lbs at 110 inches. Minimum flying weight = 2240 lbs at 103 inches varying linearly to 2500 lbs at 110 inches.

Minimum Crew: 1 Pilot.

No. of Seats: 4 seats total: 2 located at 110 inches aft of datum.

2 located at 141.4 inches aft of datum.

Maximum Baggage: 20 pounds allowed on the hat shelf.

120 pounds total.

Fuel Capacity: 106 gallons total; 98 gallons useable.

(Two 53 gallon tanks in wings at 118.0 inches aft of datum).

Oil Type and Capacity: 8 qts drainable. See Engine Type Certificate Data Sheet E3SO.

Maximum Operating

Altitude: 14,000 feet without FAA approved oxygen system installed.

18,000 feet with FAA approved oxygen system installed.

Control Surface

Movements: Wing flaps: Cruise $0^{\circ} \pm 1^{\circ}$ Take off $12^{\circ} \pm 1^{\circ}$ Landing $40^{\circ} \pm 1^{\circ}$

Ailerons: Up $22^{\circ} \pm 1^{\circ}$ Down $18^{\circ} \pm 1^{\circ}$ Aileron Trim Tab: Up $22.4^{\circ} \pm 1^{\circ}$ Down $19.6^{\circ} \pm 1^{\circ}$ Aileron Servo Tab: Up $20^{\circ} \pm 1^{\circ}$ Down $12^{\circ} \pm 1^{\circ}$ Elevator: Up $13^{\circ} + 0^{\circ} - 0.5^{\circ}$ Down $12^{\circ} \pm 1^{\circ}$ Elevator trim tab: Up $21^{\circ} \pm 1^{\circ}$ Down $30^{\circ} \pm 1^{\circ}$

Rudder: Right $17^{\circ} \pm 1^{\circ}$ Left $17^{\circ} \pm 1^{\circ}$ Left, rudder limiter $11.5^{\circ} \pm 0.5^{\circ}$

Additional Limitations: Airframe life limit: 12,000 flight hours (see NOTE 5).

Kinds of operations: Day and Night,

Visual Flight Rules (VFR) and Instrument Flight Rules (IFR).

Required Maintenance: The airplane must be maintained in accordance with the instructions for continued airworthiness

contained in the latest FAA approved revision to Chapter 4 of "Airplane Maintenance Manual,"

Document No. RB050002.

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Required Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see

Certification Basis) must be installed in the aircraft for airworthiness certification.

In addition to the above required equipment, the following equipment is also required:

The latest FAA Approved/Accepted Revision of "Pilots Operating Handbook and FAA Approved

Flight Manual," Document No. RB050000.

The required equipment for various types of operations is specified in Appendix A to Section 6 of

the latest FAA Approved Revision of Document No. RB050000.

Design Data: The airplane shall be manufactured in accordance with the latest FAA approved revision of

"Master Drawing List", Document No. RB011000, or other FAA approved data.

Serial Numbers Eligible: 42001 and on

Certification Basis: Part 23 of the Federal Aviation Regulations (FAR) effective February 1, 1965, as amended by 23-1

through 23-46, except for FAR 23.1305 and FAR 23.1359. FAR 23.1305 as amended through 23-52 and FAR 23.1359 as amended through 23-49. FAR 36 as amended on the date of

certification. Application for type certificate, dated October 24, 2002.

Equivalent Level of

Safety (ELOS) Findings: Stall and spin requirements of FAR's 23.201, 23.203, and 23.221 in accordance with

ELOS No. ACE-98-1 as detailed in the FAA memo dated September 3, 1998

(FAA memo reference no. 98-190S-581) and ELOS No. ACE-98-2 as detailed in the FAA memo

dated October 7, 1998 (FAA memo reference no. 98-190S-608).

Emergency exit requirements of FAR 23.807 in accordance with ELOS No. ACE-99-02 as detailed

in FAA memo dated February 2, 1999 (FAA memo reference no. 99-190S-64).

Production Basis: Production Certificate No. 719NM, dated April 9, 2004.

NOTE 1: A current weight and balance report with a list of equipment included in the certificated empty weight

must be provided for each aircraft at the time of original airworthiness certification.

NOTE 2: The placards specified in the latest FAA approved revision of "Pilots Operating Handbook and FAA"

Approved Flight Manual," Document No. RB050000, must be displayed.

NOTE 3: Major structural repairs must be accomplished at FAA certified repair stations rated for composite aircraft

structure work, in accordance with FAA approved Lancair repair methods or other methods approved

by the FAA.

NOTE 4: Exterior colors are limited to those specified in the latest FAA approved revision to Chapter 4 of

"Airplane Maintenance Manual," Document No. RB050002.

NOTE 5: The airframe life limit may be extended beyond 12,000 flight hours when a non-destructive inspection

process specifically approved by the FAA for this purpose is used.

III - Model LC41-550FG (Utility Category), Approved April 8, 2004

Engine: Teledyne Continental Model TSIO-550-C, Engine Type Certificate E5SO.

Fuel: 100 (green) or 100LL (blue) grade aviation fuel.

Engine Limits: Maximum takeoff power and maximum continuous power = 310 horsepower at 2600 rpm.

See Engine Type Certificate Data Sheet E5SO for additional limitations.

Propeller: Hartzell Model HC-H3YF-1RF/F7693DF, Propeller Type Certificate P35EA

Hartzell Spinner Assembly, Part No. C-6446

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Propeller Limits: Minimum diameter = 77 inches

Maximum diameter = 78 inches Low Pitch = $16.5^{\circ} \pm 0.1^{\circ}$ High Pitch = $43.0^{\circ} \pm 1.0^{\circ}$

Pitch limits measured at 30 inches radial distance.

See Propeller Type Certificate Data Sheet P35EA for additional limits.

Airspeed Limits: 162 KCAS (158 KIAS) V_o (3600 lbs)

 V_0 (2600 lbs) 138 KCAS (135 KIAS) V_{FE} (Fully Extended) 120 KCAS (117 KIAS) V_{FE} (Intermediate Setting) 130 KCAS (127 KIAS) V_{NO} 185 KCAS (181 KIAS) $V_{\scriptscriptstyle NE}$ 235 KCAS (230 KIAS)

Note: $V_{\mbox{\tiny FE}}$ decreases by 2.4 KIAS for each 1000 feet above 12,000 feet (pressure altitude)

 V_{NO} decreases by 3.5 KIAS for each 1000 feet above 12,000 feet (pressure altitude) V_{NE} decreases by 4.4 KIAS for each 1000 feet above 12,000 feet (pressure altitude).

C.G. Range: Straight line variation between points.

> 112.0 inches aft of datum from 2900 lbs to 3600 lbs. Aft Limits

Forward Limits 105.0 inches aft of datum from 2600 lbs to 2900 lbs then to 108.8

inches aft of datum at 3600 lbs.

Maximum zero fuel weight 107.2 inches aft of datum at 3300 lbs to 112.0 inches at 3300 lbs.

Minimum flying weight 105 inches aft of datum at 2600 lbs to 112 inches at 2900 lbs.

Datum: The forward edge of the wing saddle is located 97.05 inches aft of the reference datum. Refer to

the latest revision of "Airplane Maintenance Manual," Document No. RC050001, for detailed

instructions.

Leveling Means: Plumb target and plumb line hanger are located in the rear seat area.

Weight limits: Maximum ramp and takeoff = 3600 lbs.

> Maximum landing weight = 3420 lbs. Maximum empty weight = 2600 lbs.

Maximum zero fuel weight = 3300 lbs at 107.2 inches varying linearly to 3300 lbs at 112.0 inches. Minimum flying weight = 2600 lbs at 105.0 inches varying linearly to 2900 lbs at 112.0 inches.

Minimum Crew: 1 Pilot.

No. of Seats: 4 seats total: 2 located at 110 inches aft of datum.

2 located at 141.4 inches aft of datum.

20 pounds allowed on the hat shelf. Maximum Baggage:

120 pounds total.

Fuel Capacity: 106 gallons total; 98 gallons useable.

(Two 53 gallon tanks in wings at 118.0 inches aft of datum).

Oil Type and Capacity: 8 qts drainable. See Engine Type Certificate Data Sheet E5SO.

Maximum Operating

Altitude: 14,000 feet without FAA approved oxygen system installed.

18,000 or 25,000 feet with FAA approved oxygen system installed (See the airplane flight manual

for the specific limitation for the airplane as equipped).

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Control Surface

Movements: Wing flaps: Cruise 0° ±1° Take off 12° ±1° Landing 40° ±1°

Ailerons: Up $21.6^{\circ}\pm 1^{\circ}$ Down $17.7^{\circ}\pm 1^{\circ}$ Aileron Trim Tab: Up $22.4^{\circ}\pm 1^{\circ}$ Down $19.6^{\circ}\pm 1^{\circ}$ Aileron Servo Tab: Up $20^{\circ}\pm 1^{\circ}$ Down $12^{\circ}\pm 1^{\circ}$ Elevator: Up $23^{\circ}\pm 1^{\circ}$ Down $14^{\circ}\pm 1^{\circ}$ Elevator trim tab: Up $21^{\circ}\pm 1^{\circ}$ Down $30^{\circ}\pm 1^{\circ}$ Rudder: Right $30^{\circ}\pm 1^{\circ}$ Left $30^{\circ}\pm 1^{\circ}$

Additional Limitations: Airframe life limit: 12,000 flight hours (see NOTE 5).

Kinds of operations: Day and Night,

Visual Flight Rules (VFR) and Instrument Flight Rules (IFR).

Required Maintenance: The airplane must be maintained in accordance with the instructions for continued airworthiness

contained in the latest FAA approved revision to Chapter 4 of "Airplane Maintenance Manual,"

Document No. RC050001.

Required Equipment: The basic required equipment as prescribed in the applicable airworthiness regulations (see

Certification Basis) must be installed in the aircraft for airworthiness certification.

In addition to the above required equipment, the following equipment is also required:

Airplane Serial Numbers 41002 through 41041 (18,000 ft. MSL max. operating altitude): The latest FAA Approved/Accepted Revision of "Pilots Operating Handbook and FAA Approved Flight Manual," Document No. RC050000. (NOTE: Maximum operating altitude is increased to 25,000 feet MSL if modified in accordance with Lancair Service Letter SL-04-010 and equipped with the latest FAA Approved/Accepted Revision of "Pilots Operating Handbook and FAA Approved Flight Manual," Document No.

RC050002.)

Airplane Serial Numbers 41042 and on (25,000 ft. MSL max. operating altitude):
The latest FAA Approved/Accepted Revision of "Pilots Operating Handbook and FAA"

Approved Flight Manual," Document No. RC050002.

The required equipment for various types of operations is specified in Appendix A to Section 6 of the latest FAA Approved Revision of Document No. RC050000 or RC050002 (as required above).

Design Data: The airplane shall be manufactured in accordance with the latest FAA approved revision of

"Master Drawing List", Document No. RC011000, or other FAA approved data.

Serial Numbers Eligible: 41002 and on

Certification Basis: Part 23 of the Federal Aviation Regulations (FAR) effective February 1, 1965, as amended by 23-1

through 23-46, except for FAR 23.1305 and FAR 23.1359. FAR 23.1305 as amended through 23-52 and FAR 23.1359 as amended through 23-49. FAR 36 as amended on the date of

certification. Application for type certificate, dated October 24, 2002.

Equivalent Level of

Safety (ELOS) Findings: Emergency exit requirements of FAR 23.807 in accordance with ELOS No. ACE-99-02 as detailed

in FAA memo dated February 2, 1999 (FAA memo reference no. 99-190S-64).

Production Basis: Production Certificate No. 719NM, dated April 9, 2004.

NOTE 1: A current weight and balance report with a list of equipment included in the certificated empty weight

must be provided for each aircraft at the time of original airworthiness certification.

NOTE 2: The placards specified in the latest FAA approved revision of "Pilots Operating Handbook and FAA"

Approved Flight Manual," Document No. RC050000 or RC050002, must be displayed.

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NOTE 3: Major structural repairs must be accomplished at FAA certified repair stations rated for composite aircraft structure work, in accordance with FAA approved Lancair repair methods or other methods approved by the FAA.

NOTE 4: Exterior colors are limited to those specified in the latest FAA approved revision to Chapter 4 of "Airplane Maintenance Manual," Document No. RC050001.

NOTE 5: The airframe life limit may be extended beyond 12,000 flight hours when a non-destructive inspection process specifically approved by the FAA for this purpose is used.

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